

WHAT IS CLAIMED IS:

1. A fluid passage structure of an internal combustion engine, comprising:
an in-block flow passage having a first opening position on a top face of a
5 cylinder block;
an in-head flow passage having a second opening position on a bottom
face of a cylinder head, wherein the first opening position and the second opening position
are offset from each other; and
a groove that is formed in at least one of the top face and the bottom face
10 and that is provided so as to establish communication between the in-block flow passage
and the in-head flow passage.
2. The fluid passage structure according to claim 1, wherein a flow area of at
least part of the groove is designed to be smaller than an opening area of the in-block flow
15 passage on the top face and an opening area of the in-head flow passage on the bottom
face.
3. The fluid passage structure according to claim 1, wherein the groove is
provided with a throttle for restricting a flow rate of a fluid.
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4. The fluid passage structure according to claim 1, wherein the in-block
flow passage and the in-head flow passage are formed as fluid passages through which oil
flows.
- 25 5. The fluid passage structure according to claim 1, wherein the in-block
flow passage and the in-head flow passage are formed as fluid passages through which
coolant flows.

6. The fluid passage structure according to claim 1, further comprising a head gasket that is provided between the cylinder block and the cylinder head and that has a communication hole, wherein:

the groove is provided in one of the cylinder block and the cylinder head;

5 and

the communication hole is provided at a position corresponding to one of the first opening position and the second opening position that is provided on the other side of the groove.

10 7. The fluid passage structure according to claim 6, wherein an opening diameter of the communication hole is designed to be larger than an opening diameter of the one of the first opening position and the second opening position that is provided on the other side of the groove.

15 8. The fluid passage structure according to claim 6, wherein a bead is provided so as to protrude from at least one face of the head gasket, and to surround the opening position of the in-block flow passage, the opening position of the in-head flow passage, and the groove.

20 9. The fluid passage structure according to claim 1, wherein:
a first recess portion that is larger in opening area than one of the first opening position and the second opening position and that has a predetermined depth is formed in said one of the first opening position and the second opening position;
the groove has a communication portion and a second recess portion;
25 the communication portion is provided so as to establish communication between the first recess portion and the second recess portion; and
the second recess portion is designed to be provided on the same side as one of the cylinder block and the cylinder head that is provided with the first recess

portion, to be located adjacent to the first recess portion, to be formed at a position corresponding to one of the first opening position and the second opening position that is provided on the other side of one of the cylinder block and the cylinder head that is provided with the first recess portion, to be larger in opening area than one of the first opening position and the second opening position to which the second recess portion corresponds, and to have a predetermined depth.

10. The fluid passage structure according to claim 1, wherein the groove is constant in width and has a bottom face constituting part of a lateral face of a circular cylinder.